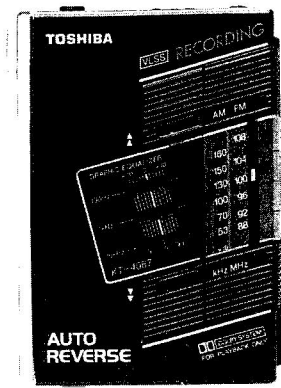
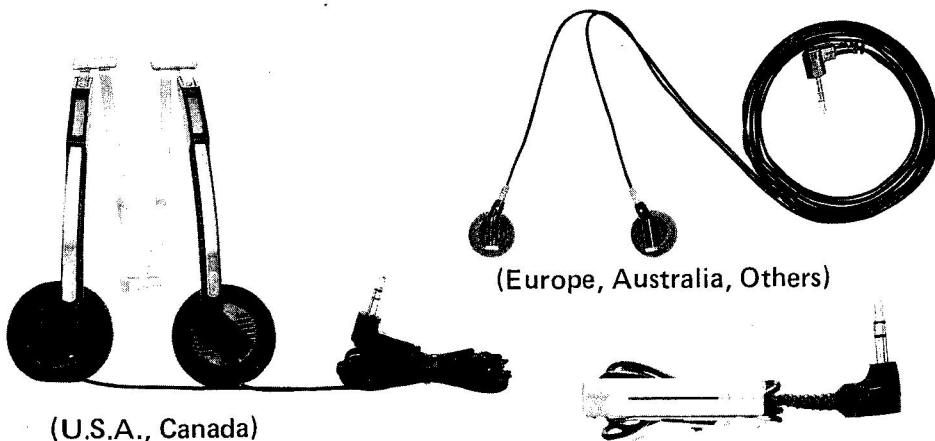


TOSHIBA

STEREO RADIO CASSETTE RECORDER

KT-4087, V780



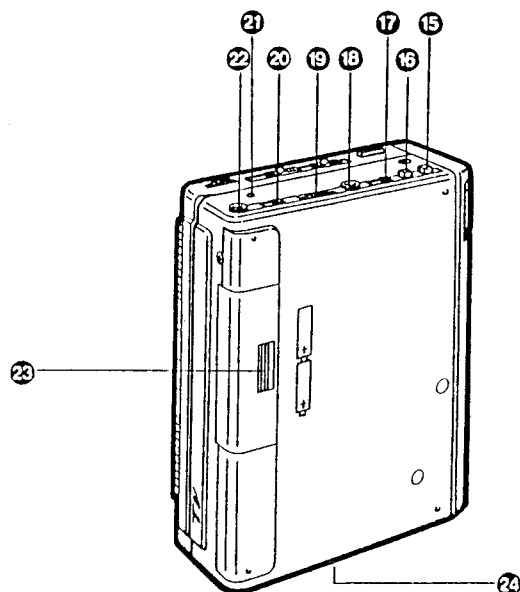
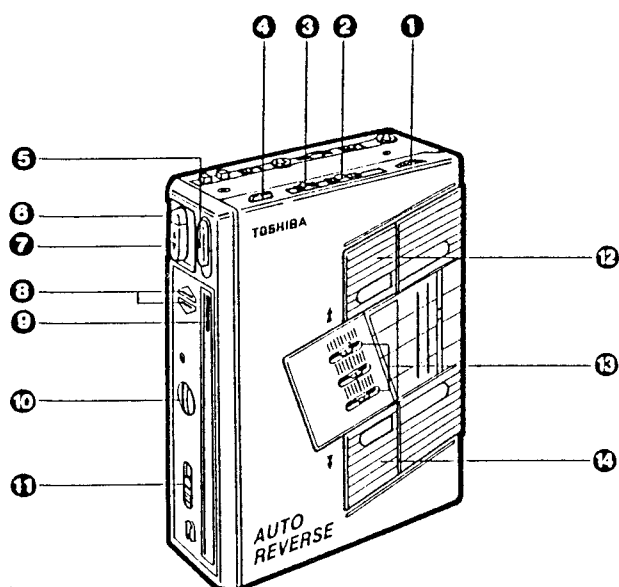
SPECIFICATIONS

Receiving frequency:	FM: 87.5 MHz to 108 MHz AM: 526.5 kHz to 1606.5 kHz	Output terminal:	Headphones jack [PHONES] : 3.5-mm dia. stereo x 1
Antenna:	FM: Headphone cord AM: Ferrite-core antenna	Maximum output power:	40 mW (20 mW + 20 mW) U.S.A., Canada 30 mW (15 mW + 15 mW) Europe, Australia, Others
Track system:	4-track, 2-channel stereo	Power supply:	DC 3V (IEC R03; size-AAA battery x 2) External power source supplied to the [DC IN 3V] jack (negative polarity to 3.4-mm dia. center contact)
Recording system:	AC bias	Dimensions:	77.9 (W) x 113 (H) x 26 (D) mm
Erasing system:	Magnetic erasure	Weight:	235 g (without batteries)
Recommended tapes:	Normal (ferric), chrome and metal: C-30 to C-90		
Tape speed:	4.8 cm/sec		
Frequency response:	Playback: Normal 40 Hz — 14 kHz METAL/CrO ₂ 40 Hz — 16 kHz Recording: Normal 100 Hz — 10kHz		
Input terminal:	Microphone jack [MIC] : 3.5-mm dia. stereo x 1, low impedance (200 ohms to 2 kohms) Input level approx. 0.5 mV		

Specifications are subject to change without notice.

4087-K-TC, TE, AY, TA, V780-K-VF

OPERATING CONTROLS



- ① [TUNING] knob
- ② [AM, FM] band selector
- ③ [NORMAL, METAL/CrO₂] tape selector/[FM-ST, FM-MONO] FM mode selector (dual operation)
- ④ [OPEN] button
- ⑤ [STOP] button
- ⑥ [REC] button
- ⑦ [PLAY] button
- ⑧ [FWD, REV] indicators
- ⑨ [REC] indicator
- ⑩ [MANUAL] button
- ⑪ [AUTO REVERSE] selector
- ⑫ [▶▶] button
- ⑬ [GRAPHIC EQUALIZER] control
- ⑭ [◀◀] button
- ⑮ [◻◻]*/[BEAT] switch (dual operation)
- ⑯ [VLSS]*/[FAST-PB] switch (dual operation)
- ⑰ [PAUSE] selector
- ⑱ [MIC] jack
- ⑲ [VOL] control
- ⑳ [TAPE/RADIO] [OFF], [RADIO] function selector
- ㉑ [OPR] indicator
- ㉒ [PHONES] jack
- ㉓ Battery compartment lid
- ㉔ [DC IN 3V] jack

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

Name Label KT-4087



**TOSHIBA STEREO
RADIO CASSETTE RECORDER
MODEL NO. KT-4087**

POWER SOURCE DC 3V 
IEC R03("AAA" CELL)X2

TOSHIBA CORPORATION
MADE IN JAPAN

Name Label KT-V780



**TOSHIBA STEREO
RADIO CASSETTE RECORDER
MODEL NO. KT-V780**

POWER SOURCE DC 3V 
IEC R03("AAA" CELL)X2

TOSHIBA CORPORATION
MADE IN JAPAN

DISASSEMBLY INSTRUCTIONS

FRONT CABINET REMOVAL

1. Remove four screws (A) (Figures 1 and 2)
2. Push OPEN button to open cassette lid.
Lift up front cabinet, and the front cabinet will be removed. (Figure 2)

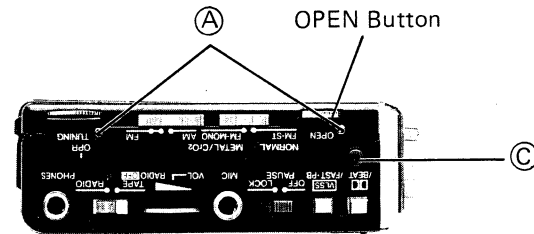


Figure 2

SIDE CABINET REMOVAL

1. Remove screw (B) and two screws (C), and the side cabinet will be removed. (Figures 1, 2 and 3)

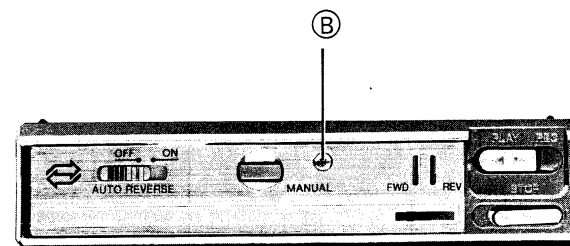


Figure 3

BACK CABINET REMOVAL

1. Remove side cabinet.
2. Remove two screws (D), lift up DC jack side, and the back cabinet will be removed. (Figures 1 and 4)



Figure 4

MAIN P.C. BOARD REMOVAL

1. Remove back cabinet.
2. Remove three screws (E), (F) and (G). (Figure 5)
3. Unsolder Head Flexible P.C. Board and two motor leads (H), and the main P.C. Board will be removed. (Figure 5)

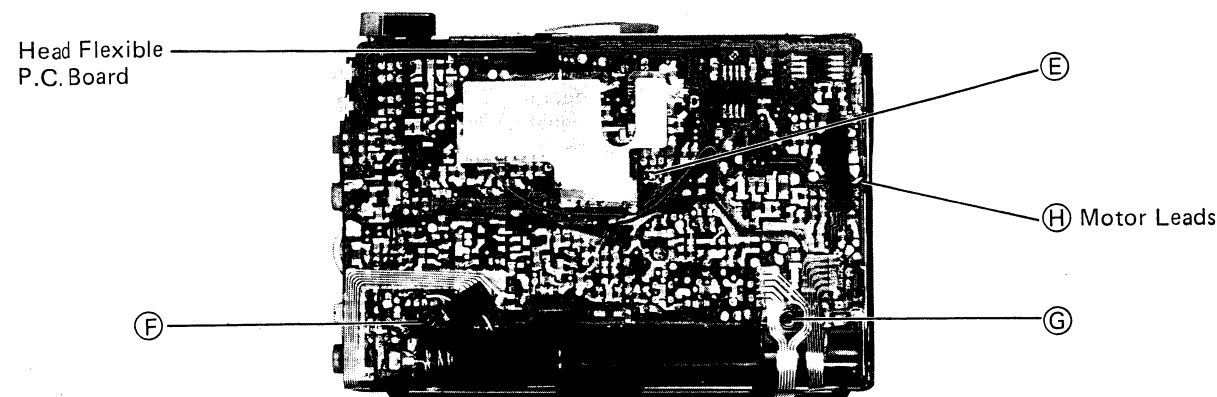


Figure 5

DIAL CORD RESTRINGING

1. Turn dial drum counterclockwise.
2. Proceed stringing in step ① ~ ⑦.
3. Turn tuning knob counterclockwise fully.
4. Mount pointer at pointer mounting position.

Note: After mounting pointer, pointer may be loosened by dial cord twist. Then remove dial cord as ⑥ and ⑦ and turn pointer to the arrow (B) direction once.

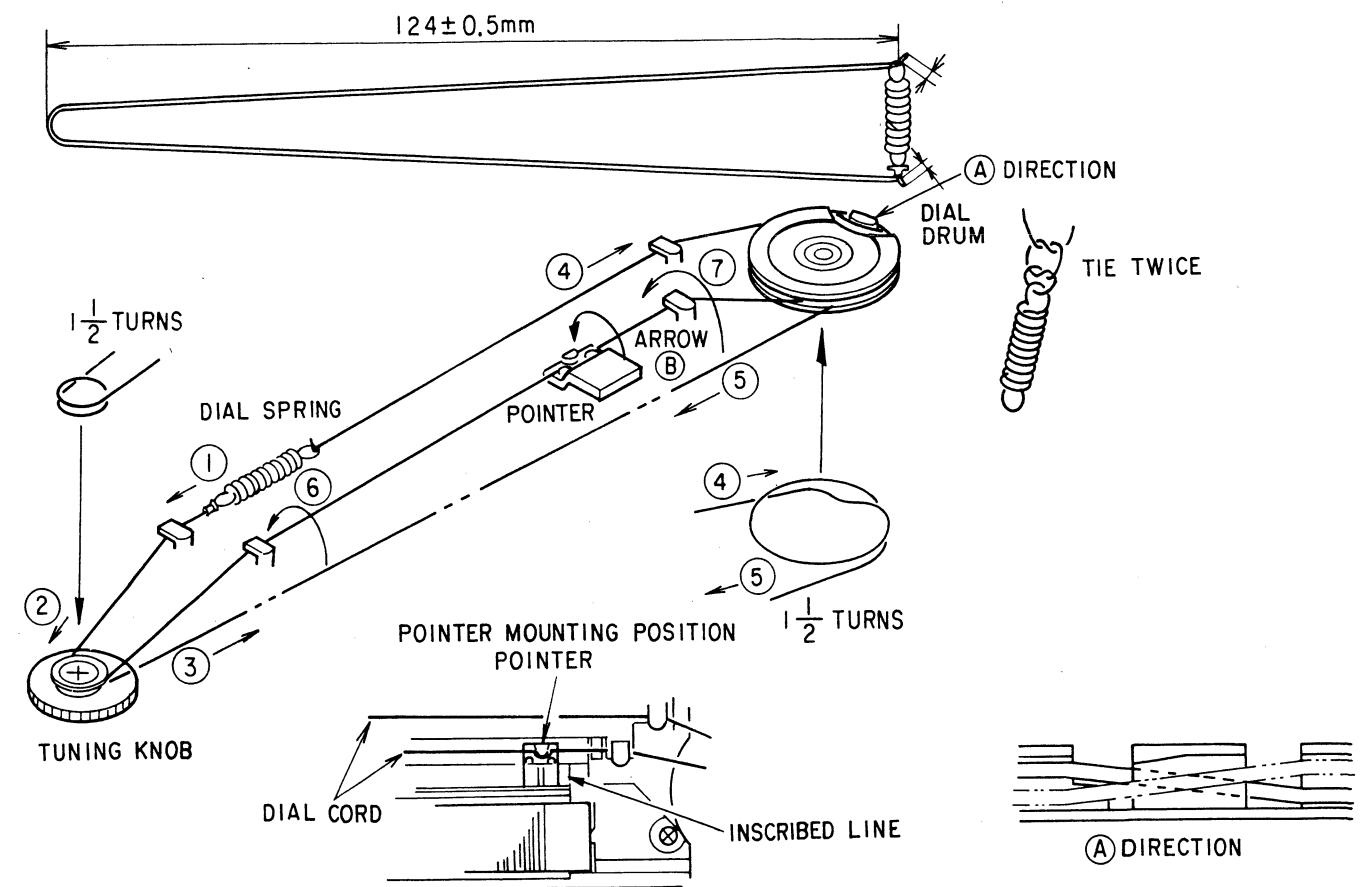


Figure 6

Current Consumption

TAPE (C 60 Rewinding Center)	102mA
FM	52mA
AM	42mA

Torque

PLAY/REC.	32±7g.cm
FF	More than 60g.cm(80)
REW	More than 60g.cm(80)

ADJUSTMENTS

TEST EQUIPMENTS

1. AM Signal Generator with frequency range of at least from 450 kHz to 13 MHz.
2. FM Signal Generator with 10.7 MHz marker signal.
3. AM Sweep Generator of 455 kHz center frequency.
4. FM Sweep Generator with a wide band amplifier of approximate 500 kHz, with 10.7 MHz marker signal.
5. Oscilloscope with a wide band amplifier of approximate 100 kHz.
6. Loop Antenna. (AM)
7. Test loop — a three turn loop antenna of 1 cm diameter. (FM-IF)
8. Test loop — a coil of any size wire with one turn or more. (AM-IF)
9. VTVM
10. Dummy antenna. (FM)
11. Adjustment Screwdriver.

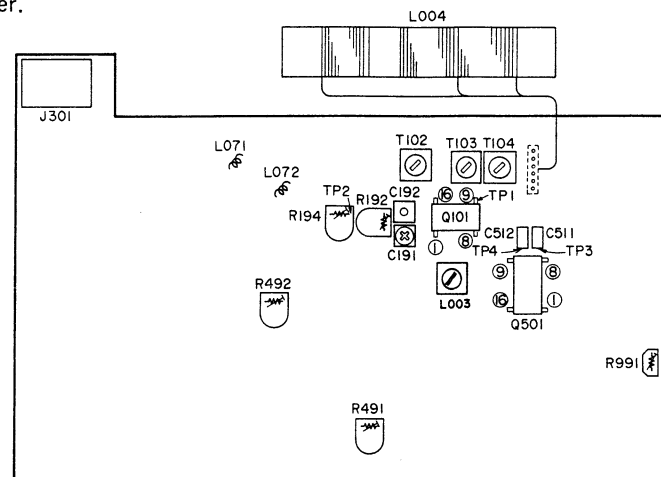


Figure 7

AM ALIGNMENT

1. Turn on the AM signal generator, sweep generator and the VTVM allowing a fifteen-minute warm-up period.
2. First, do the AM-IF Alignment (AM ALIGNMENT CHART-Step 1), referring to Figure 8 .
3. Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio. (Figure 9)
4. Connect the VTVM across the Headphone jack.
5. Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.
6. Set volume control at mid-position,

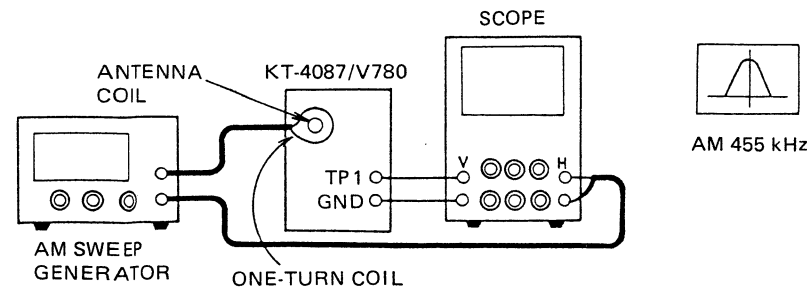


Figure 8

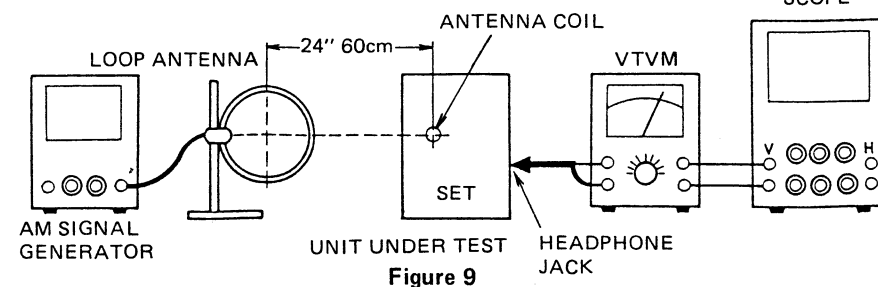


Figure 9

AM ALIGNMENT CHART

Band	Step	Generator Frequency	Radio Dial Setting	Adjustment	Remarks
AM-IF	1	455 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	T102 (GR) T104 (N)	Adjust coil T102 and T104 until best signal peak is obtained.
AM	1	Adjust R194 so that 1.0 ±0.05V is obtained at TP2, using a VTVM with high input impedance.			
	2	515 kHz	Tuning Knob Fully Counter-clockwise (Lowest Frequency)	Osc. Coil L003	Adjust for maximum indication.
	3	1650 kHz	Tuning Knob Fully Clockwise (Highest Frequency)	Osc. Trim. C191	Adjust for maximum indication.
	4	Repeat steps 2 and 3 as required.			
	5	600 kHz	Tune to Signal.	Ant. Coil L004	Adjust for maximum indication.
	6	1400 kHz	Tune to Signal.	Ant. Trim. C192	Adjust for maximum indication.
	7	Repeat steps 5 and 6 as required.			

- Notes: (1) Make tracking alignment with bar antenna (L004) equipped with cassette holder.
 (2) When changing variable capacitor diode(s), change both variable capacitor diode(s) for antenna and OSC circuits simultaneously. In this case, paired variable capacitor diode(s) should be used.
 (3) When changing tuning VR (R191) or repairing transformer, radio section adjustment should be made.

FM ALIGNMENT

1. Set the select switch to FM position.
2. Turn on both sweep generator and oscilloscope, and allow a fifteen-minute warm-up period.
3. Connect the RF SWEEP SIGNAL OUTPUT of the sweep generator through the loop antenna to the receiver. (Figure 10)
4. Connect the oscilloscope Vertical input directly to the test point TP1 and connect the shielded lead to the ground.
5. Connect the SWEEP VOLTAGE OUTPUT of the sweep generator to the oscilloscope Horizontal input.
6. Proceed as outlined in the FM-IF ALIGNMENT CHART.

FM-IF ALIGNMENT CHART

Step	Signal coupling	Equip.	Tuning	Connection	Adjust. point	Pattern
1	Connect sweep generator output to a three-turn loop antenna of 1 cm diameter.	Sweep generator of 10.7 MHz center freq. with 10.7 MHz marker.	Tuning Knob fully counter-clockwise (Lowest Frequency.)	Set scope for connecting output signal from TP1 to vertical axis of scope "V" and sweep generator output to horizontal axis "H".	T103 (BLU)	Adjust coil T103 in order until the best S curve is obtained. (Figure 11)

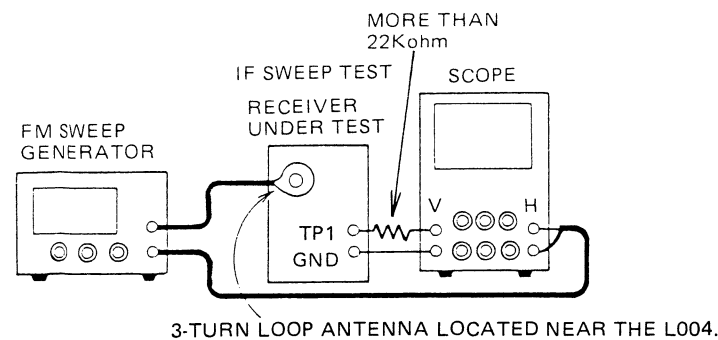


Figure 10

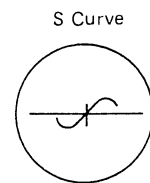


Figure 11

FM-RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a FM dummy antenna across the headphone jack. (Figure 12)
3. Connect the VTVM across the FM dummy antenna.
4. Set the volume control to mid-position.
5. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the FM-RF ALIGNMENT CHART.

FM-RF ALIGNMENT CHART

Step	Signal Generator	Radio Dial Setting	Adjustment	Remarks
1	108.3 MHz (1)	Tuning Knob Fully Clockwise (Highest Frequency)	Osc. Coil L072	Adjust for maximum output indication.
2	87.5 MHz (1)	Tuning Knob Fully Counter-clockwise (Lowest Frequency)	Trim. VR R192	Adjust for maximum output indication.
3	Repeat steps 1 and 2 as required.			
4	98 MHz	Tune to signal	Ant. Coil L071	Adjust for maximum output indication.

- Notes:** (1) When P.C. Board is mounted on the mechanism chassis after completion of FM alignment, the receive frequency will shift about 200 kHz in higher direction. So set the frequency to a value about 200 kHz lower than the reception frequency in consideration of the shift, and check the frequency coverage range after the P.C. Board has been assembled completely. If the range is out of the limit, adjust the frequency again.
- (2) When changing variable capacitor diode(s), change both variable capacitor diode(s) for antenna and OSC circuits simultaneously. In this case, paired variable capacitor diode(s) should be used.

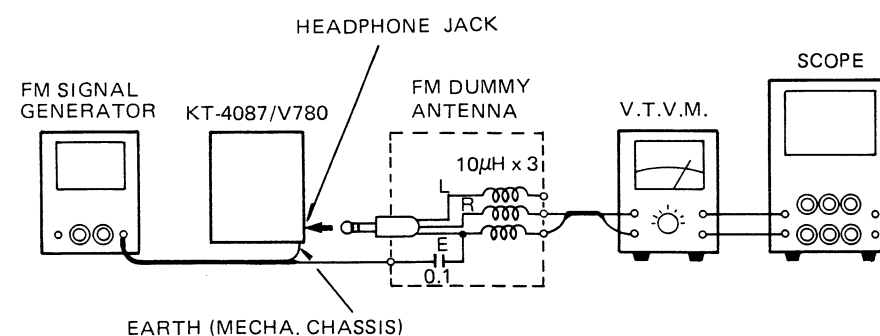


Figure 12

CAUTION:

When realigning the FM Receiving Frequency, the highest end of the frequency range should not be more than 108 MHz and the lowest end of the frequency range should not be less than 87.5 MHz, in order to comply with FTZ regulations in West Germany.

AZIMUTH ADJUSTMENT

1. Remove back cabinet.
2. Load azimuth tape (more than 10 kHz) and play back the tape in **REV** direction.
3. Insert $\ominus$ driver into (A) and adjust headphone output for max.
4. Play back the tape in **FWD** direction. Adjust screw (B) for max. output.
5. Play back the tape in **REV** direction again and check if headphone output is max. If the check is OK, proceed step 6 and if NG, repeat steps 3 and 4.
6. Fix adjusted screws (B) and (C) with lock tight.
7. Assemble back cabinet.

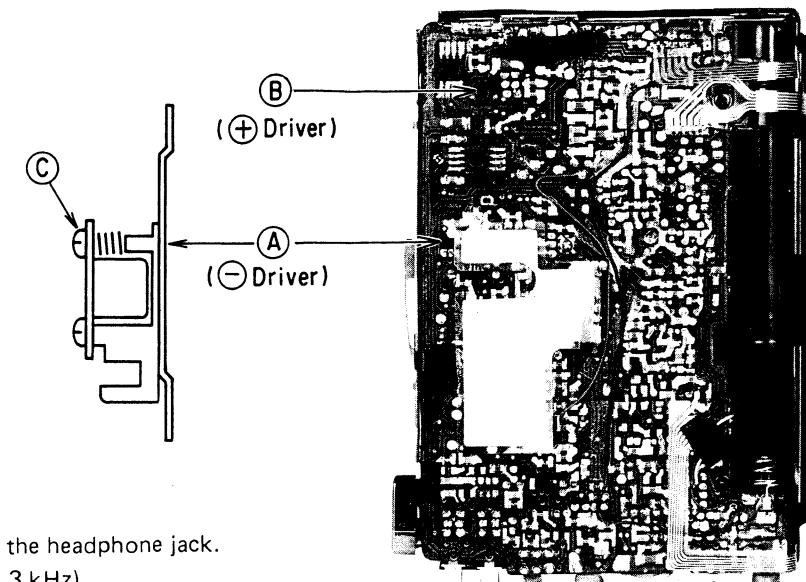


Figure 13

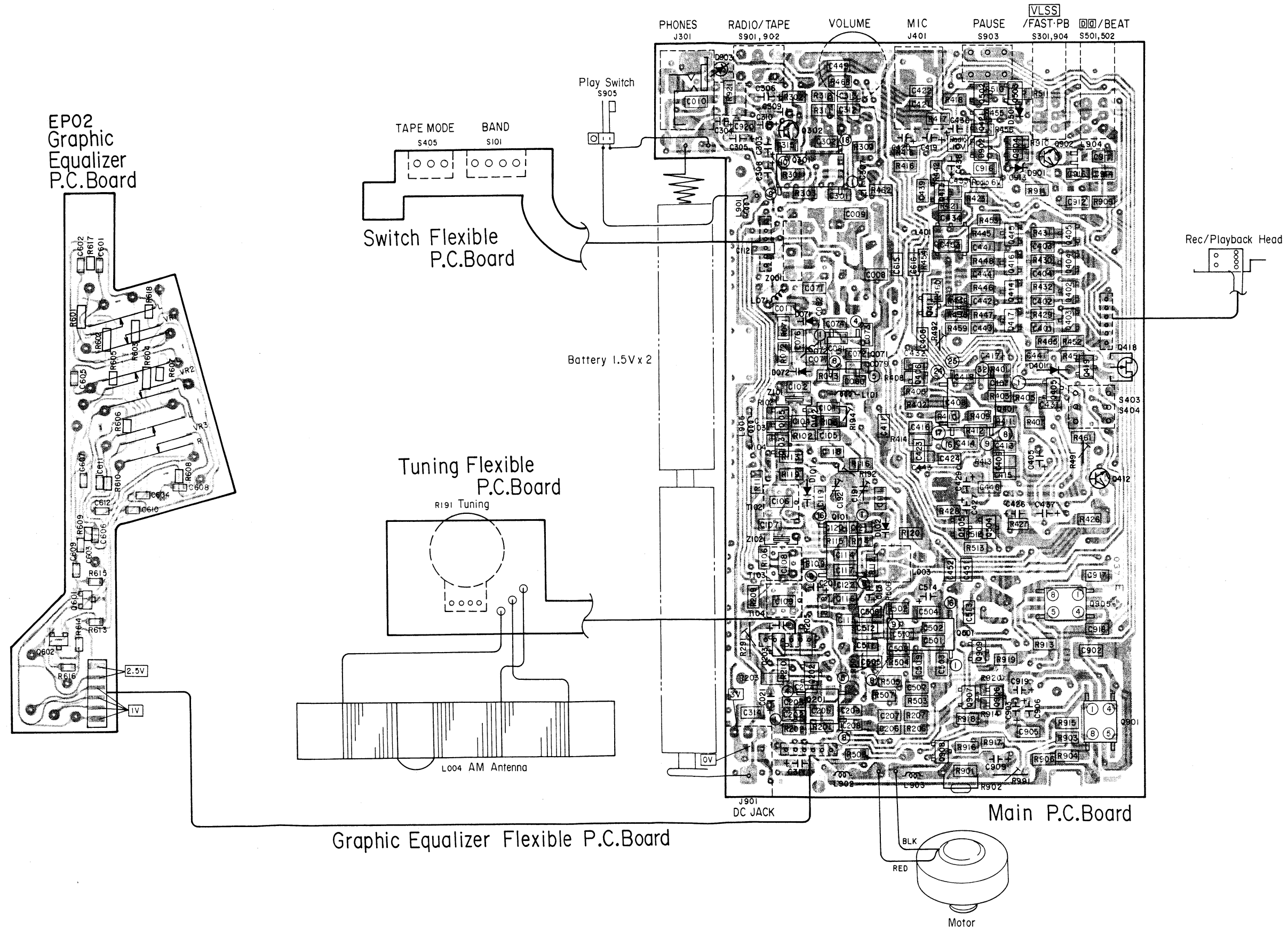
MOTOR SPEED ADJUSTMENT

1. Connect the frequency counter to the headphone jack.
2. Insert cassette test tape (MTT-111 3 kHz).
3. Playback the test tape.
4. Adjust R991 for 3000 Hz $\pm$ 30 Hz reading on the frequency counter.

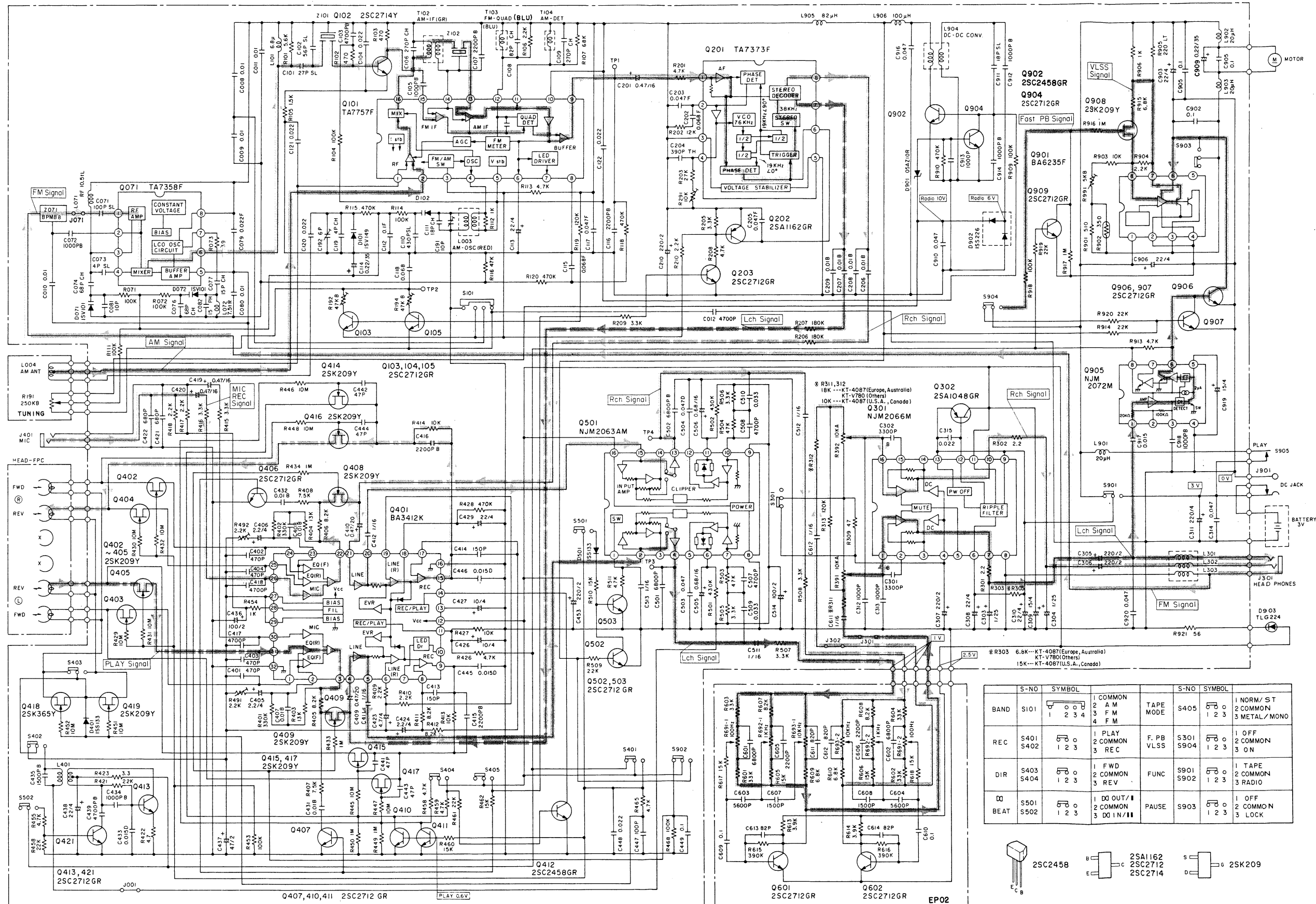
DOLBY ADJUSTMENT

1. Load MTT-150 and adjust R491 and R492 so that 100mV is obtained at TP3 and TP4.

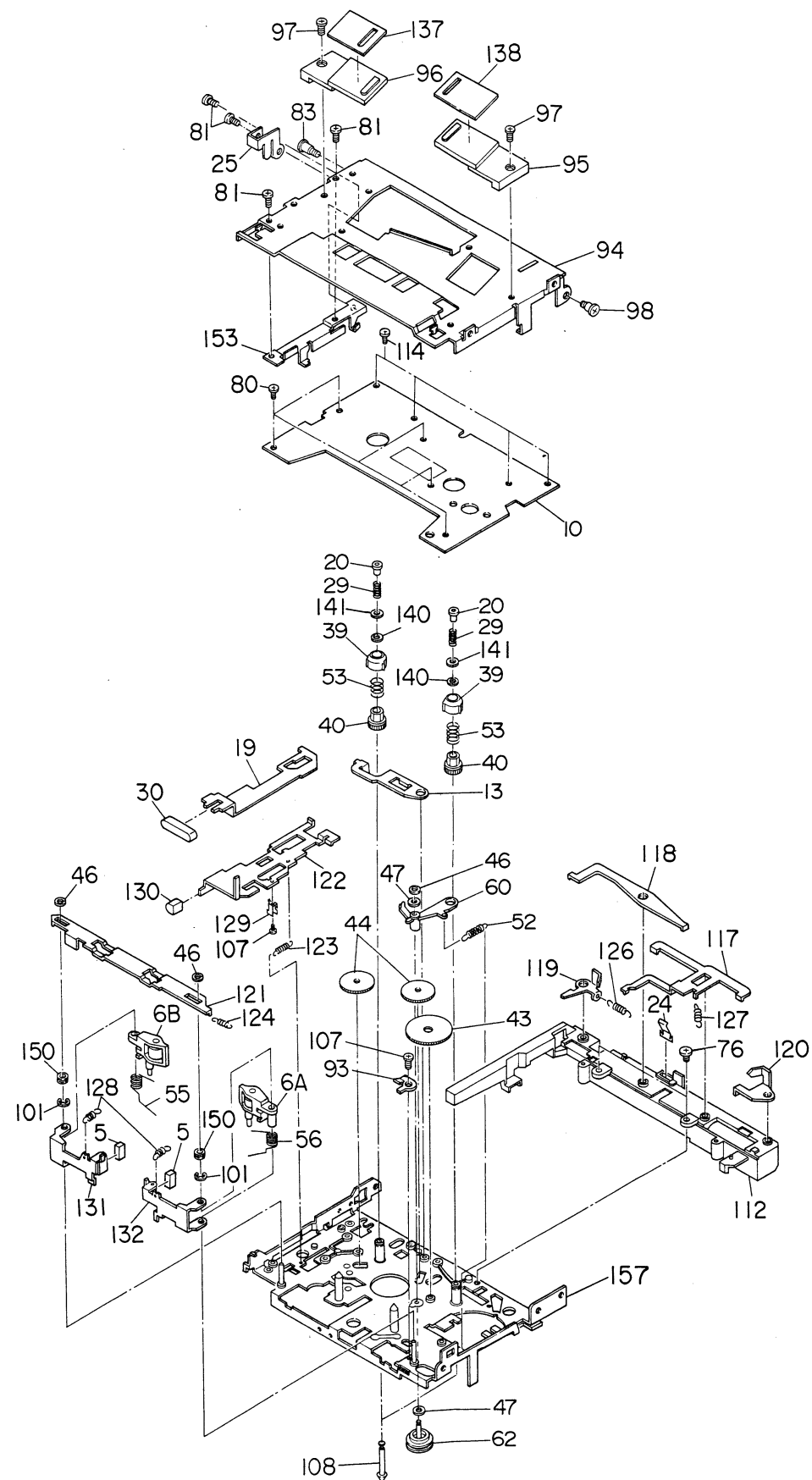
ELECTRICAL PARTS LOCATIONS



SCHEMATIC DIAGRAM

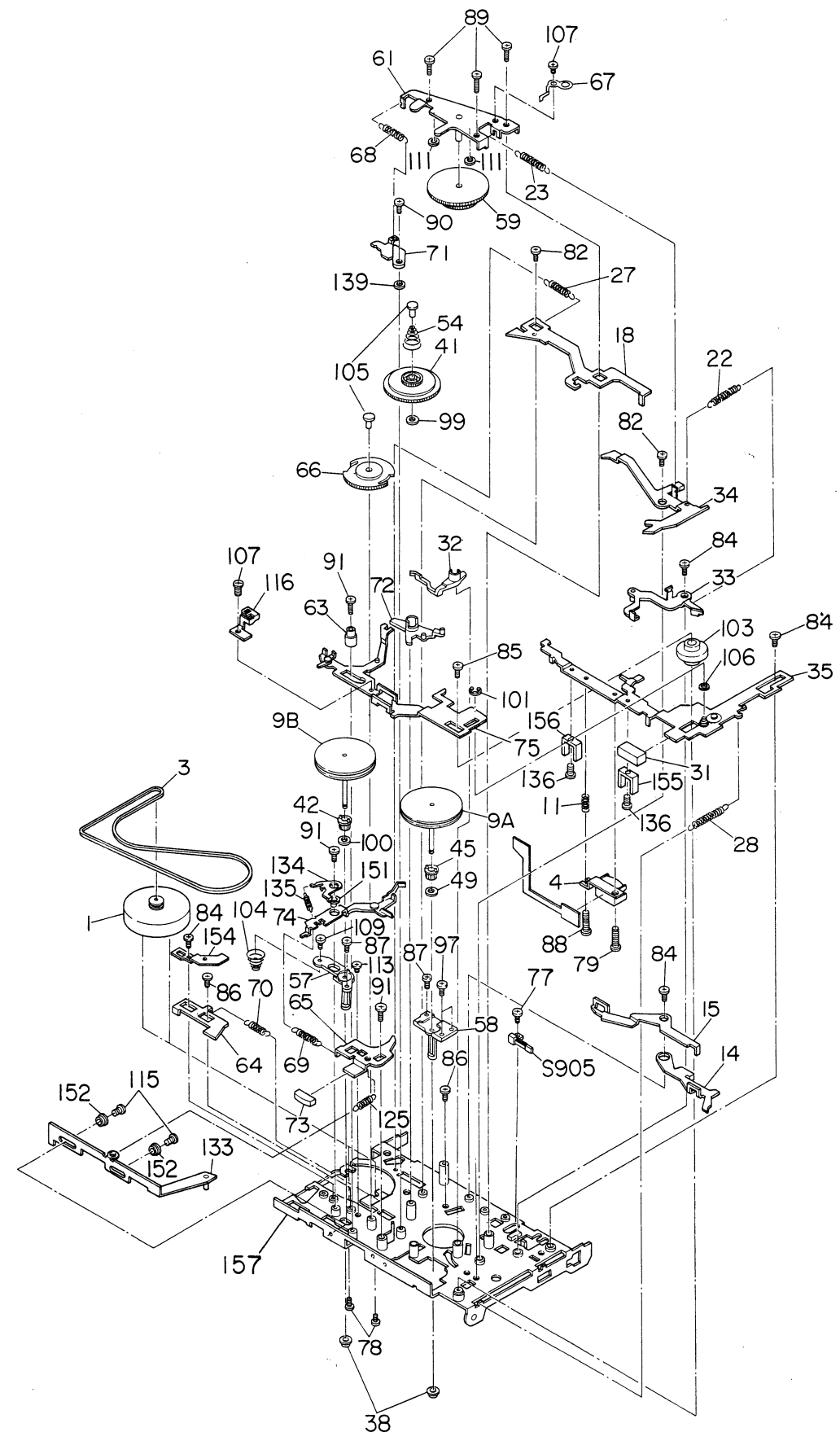


MECHANISM EXPLODED VIEW (UPPER)



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

MECHANISM EXPLODED VIEW (LOWER)



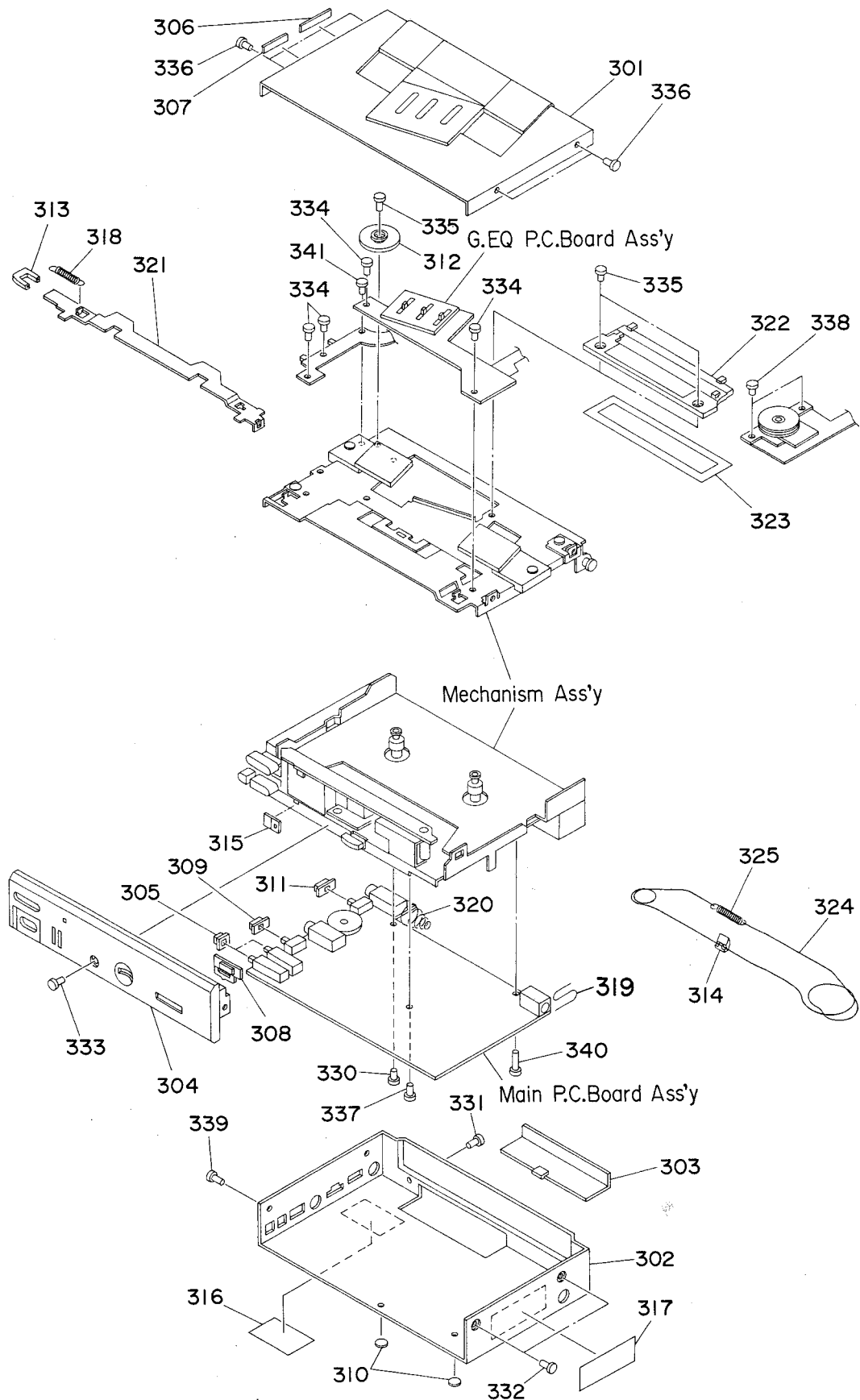
NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

MECHANISM PARTS LIST

Location No.	Part No.	Description
1	22125371	Motor
3	25759060	Belt, Drive
4	22217508	Head, Record/Playback
5	22218304	Erase Head
6A	22797129	Pressure Roller Ass'y, R
6B	25797128	Pressure Roller Ass'y, L
9A	25797127	Flywheel Ass'y, R
9B	25797126	Flywheel Ass'y, L
10	25734543	Mecha. Cover
11	25776997	Spring, Azimuth
13	25747271	Lever, Switch
14	25747272	Lever, Rewind
15	25747319	Lever, FF
18	25749212	Slider, Lock
19	25749215	Slider, Stop
20	25754511	Reel Bush
22	25776925	Spring, Lever, L
23	25776926	Spring, Lever, R
24	25779539	Spring, Cassette
25	25779634	Spring, Click, L
27	25776930	Spring, Lock Slider
28	25776988	Spring, Head Slider
29	25777597	Spring, FF Shaft
30	25784535	Button, Stop
31	25784533	Button, Play
32	25784482	Lever, Gear
33	25792276	Gear Lever Ass'y, L
34	25792164	Gear Lever Ass'y, R
35	25792163	Head Slider Ass'y
38	25729018	Cap, Capstan
39	25754527	Reel Top
40	25756519	Gear, Reel
41	25756520	Gear, Change
42	25756521	Gear, Flywheel, L
43	25756523	Gear, Relay
44	25756524	Gear, Relay
45	25756525	Gear, Flywheel, R
46	25766050	Washer, 1.6 x 4 x 0.5t
47	25766338	Washer, 2.1 x 5 x 0.13t
49	25766324	Washer, 3.1 x 1.9 x 0.13t
52	25776936	Spring, Tension Lever
53	25777596	Spring, Reel Cap
54	25777538	Spring, Change Gear
55	25778348	Spring, Pressure Roller, L
56	25778349	Spring, Pressure Roller, R
57	25792022	Cap Ass'y, Flywheel, R
58	25792023	Cap Ass'y, Flywheel, L
59	25792024	Take-up Gear Ass'y
60	25792275	Tension Lever Ass'y
61	25792160	Gear Mount Ass'y
62	25793001	Guide Pulley Ass'y
63	25726790	Bush
64	25749145	Slider, Tension
65	25749213	Slider, Manual
66	25756572	Gear, Reverse
67	25779638	Spring, Head Slider
68	25770057	Spring, Gear Lock Lever
69	25776998	Spring, Manual Slider
70	25770053	Spring, Tension Slider
71	25784413	Lever, Gear Lock
72	25784414	Lever, ASO
73	25784532	Button, Manual
74	25792215	Limit Lever Ass'y
75	25792161	Slide Lever Ass'y

Location No.	Part No.	Description
76	22707216	Screw, $\phi 1.7 \times 1.8\text{mm}$
77	22707725	Screw, $\phi 1.7 \times 2.5\text{mm}$, PAN
78	22708081	Screw, $\phi 1.7 \times 18\text{mm}$, PAN
79	22708336	Screw, $\phi 2.0 \times 2.2\text{mm}$, PAN
80	22708654	Screw, $\phi 1.7 \times 2.5\text{mm}$, FLT
81	22707967	Screw, $\phi 1.4 \times 1.2\text{mm}$, PAN
82	22707970	Screw, $\phi 1.7 \times 3\text{mm}$, PAN
83	22708769	Screw, $\phi 1.4 \times 6.6\text{mm}$, Special
84	22708617	Screw, $\phi 1.7 \times 2\text{mm}$, PAN
85	22708618	Screw, $\phi 1.7 \times 3.8\text{mm}$, PAN
86	22708619	Screw, $\phi 1.7 \times 1.5\text{mm}$, PAN
87	22707544	Screw, $\phi 1.4 \times 2\text{mm}$, FLT
88	22708782	Screw, Special
89	22708620	Screw, $\phi 1.7 \times 6.8\text{mm}$, PAN
90	22707882	Screw, $\phi 1.7 \times 3.5\text{mm}$, PAN
91	22708621	Screw, $\phi 1.7 \times 4.5\text{mm}$, PAN
93	25779650	Spring
94	25885914	Cassette Holder Ass'y
95	25888097	Button, Fast, R
96	25888096	Button, Fast, L
97	22707971	Screw, $\phi 1.4 \times 1.8\text{mm}$, PAN
98	22708604	Screw, $\phi 1.4 \times 2.1\text{mm}$, Special
99	25766325	Washer, 5 x 2.5 x 0.25t
100	25766340	Washer, 3 x 1.7 x 0.3t
101	25735283	E Ring, $\phi 1.5$, BLK
103	25726799	Bush
104	25777582	Spring
105	25723548	Bush
106	25726801	Sleeve
107	22707969	Screw, $\phi 1.4 \times 1.2\text{mm}$, PAN
109	22707614	Screw, $\phi 1.4 \times 4\text{mm}$, PAN
111	25766339	Washer, 4 x 1.7 x 0.2t
112	25887184	Battery Holder
113	22708754	Screw, $\phi 1.4 \times 2.2\text{mm}$, FLT
114	22708788	Screw, $\phi 1.7 \times 2.5\text{mm}$, 2TXFLT
115	22707495	Screw, $\phi 1.4 \times 1.6\text{mm}$, FLT
116	25779637	Spring
117	25747318	Lever, Bias
118	25747320	Lever, Rec. Relay
119	25747321	Lever, Rec. Stop, L
120	25747322	Lever, Rec. Stop, R
121	25749211	Slider, Erase Head
122	25749214	Slider, Rec.
123	25776989	Spring, Rec. Slider
124	25776990	Spring, E Head Slider
125	25776991	Spring, ASO Slider
126	25776992	Spring, Rec. Stop
127	25776993	Spring, Bias Lever
128	25776994	Spring, Erase Head
129	25779636	Spring
130	25784534	Button, Rec.
131	25792158	Head Lever Ass'y, L
132	25792159	Head Lever Ass'y, R
133	25792162	ASO Slider Ass'y
134	25747346	Sub Limit Lever
135	25770047	Spring
136	22707832	Screw, $\phi 1.4 \times 2.5\text{mm}$, PAN
137	25888094	Decoration Button, L
138	25888095	Decoration Button, R
139	25766409	Washer, $\phi 1.7$
140	25766399	Washer, $\phi 3.5$
141	25766220	Washer, $\phi 3.1$

CABINET EXPLODED VIEW



NOTE: Parts excluded in the parts list are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CABINET PARTS LIST

Location No.	Part No.	Description
301	25889300	Front Cabinet Ass'y, (U.S.A., Europe and Australia)
301	25889301	Front Cabinet Ass'y, (Others)
302	25887356	Back Cabinet
303	25887170	Battery Cover
304	25887186	Side Panel
305	25888059	Button, Push Switch
306	25888060	Knob, Band
307	25888061	Knob, FM Mode/Tape SW
308	25888087	Knob, Reverse
309	25888141	Knob, Pause
310	25872519	Mask Sheet
311	25886193	Knob, Function
312	25886791	Knob, Tuning
313	25886792	Knob, Lock
314	22731019	Pointer
315	22731022	Direction Plate
316	22900678	Dolby Label
317	22900813	Nameplate (U.S.A./Europe/Australia)
317	22900814	Nameplate (Others)
318	25776942	Spring, Lock Plate
319	25777551	Spring, Battery Contact
320	25777619	Spring, Battery Contact
321	25847343	Lock, Plate
322	22714528	Antenna Holder
323	25853098	Antenna Sheet
324	22999327	Dial Cord
325	25776941	Spring, Dial Cord
330	22707638	Screw, $\phi 1.7 \times 4.5\text{mm}$, BID
331	22707651	Screw, $\phi 1.7 \times 4\text{mm}$, PAN
332	22708934	Screw, $\phi 1.7 \times 2.5\text{mm}$, PAN
333	22708935	Screw, $\phi 1.7 \times 2.5\text{mm}$, PAN
334	22707967	Screw, $\phi 1.4 \times 1.2\text{mm}$, PAN
335	22707971	Screw, $\phi 1.4 \times 1.8\text{mm}$, PAN
336	22708930	Screw, $\phi 1.4 \times 1.4\text{mm}$, PAN
337	22708460	Screw, $\phi 1.4 \times 2.5\text{mm}$, PAN
338	22708917	Screw, $\phi 1.4 \times 1\text{mm}$, PAN
339	22708932	Screw, $\phi 1.7 \times 7.5\text{mm}$, PAN
340	22708799	Screw, $\phi 1.7 \times 9.5\text{mm}$, PAN
341	22707630	Screw, $\phi 1.4 \times 2\text{mm}$, PAN

Location No.	Part No.	Description

PARTS LIST

Location No.	Part No.	Description
SEMICONDUCTORS		
Q071	B0325505	IC, TA7358F
Q101	B0358075	IC, TA7757F
Q102	A6335580	Transistor, 2SC2714-Y
Q103, 105	A6335480	Transistor, 2SC2712-GR
Q201	B0325650	IC, TA7373F
Q202	A6541140	Transistor, 2SA1162-GR
Q203	A6335480	Transistor, 2SC2712-GR
Q301	22117711	IC, NJM2066M
Q302	A6534440	Transistor, 2SA1048-GR
Q401	22117548	IC, BA3412K
Q402, 403, 404, 405	A6043330	Transistor, 2SK209-Y
Q406, 407	A6335480	Transistor, 2SC2712-GR
Q408, 409	A6043330	Transistor, 2SK209-Y
Q410, 411	A6335480	Transistor, 2SC2712-GR
Q412	A6332440	Transistor, 2SC2458-GR
Q413	A6335480	Transistor, 2SC2712-GR
Q414, 415, 416, 417, 419	A6043330	Transistor, 2SK209-Y
Q418	A6058710	Transistor, 2SK365-Y
Q421	A6335480	Transistor, 2SC2712-GR
Q501	22117797	IC, NJM2063AM
Q502, 503	A6335480	Transistor, 2SC2712-GR
Q901	22117699	IC, BA6235F
Q902	A6332440	Transistor, 2SC2458-GR
Q904	A6335480	Transistor, 2SC2712-GR
Q905	22117887	IC, NJM2072M
Q906, 907	A6335480	Transistor, 2SC2712-GR
Q908	A6043330	Transistor, 2SK209-Y
Q909	A6335480	Transistor, 2SC2712-GR
D071, 072	22119206	Diode, 1SV101, Pair
D101, 102	22119207	Diode, 1SV149, Pair
D401, 501	22119100	Diode, 1SS133
D901	A7112900	Diode, 05AZ10-R
D902	A7152750	Diode, 1SS226
D903	A8606960	Diode, TLG224, LED

Location No.	Part No.	Description
ELECTRICAL PARTS		
L003	22245492	Coil, AM Oscillator
L004	22243112	Coil, AM Antenna
L071	22292242	Coil, FM Antenna
L072	22295251	Coil, FM Oscillator
L101	22291399	Coil, Choke, 6.8 μ H
L301/302/303	22291393	Coil, Choke
L401	22235289	Coil, Tape Bias Oscillator
L901, 902, 903	22211327	Coil, Choke, 20 μ H
L904	22230111	Coil, DC/DC Converter
L905	22291398	Coil, Choke, 82 μ H
L906	22291312	Coil, Choke, 100 μ H
T102	22264926	IF Transformer, AM
T103	22267456	IF Transformer, FM-QUAD
T104	22266407	IF Transformer, AM-DET
J301	22198176	Jack, Headphone
J401	22198175	Jack, Microphone
J901	22198074	Jack, Power
Z071	22153266	Filter, Band Pass
Z101	22153361	Filter, Ceramic, 10.7MS2W
Z102	22153214	Filter, Ceramic, AM
S101	22196718	Slide Switch, Band Select
S301, 904	22196859	Push Switch, F.PB/VLSS
S401, 402	22196863	Slide Switch, Rec./Play
S403, 404	22196863	Slide Switch, FWD/REV
S405	22196307	Slide Switch, NORM/METAL
S501/502	22196859	Push Switch, Dolby
S901/902	22196943	Slide Switch, TAPE/RADIO
S903	22196943	Slide Switch, Pause
S905	22196222	Leaf Switch, Play
EP02	22657448	P.C. Board Ass'y, Graphic Equalizer
EP03	22199018	Flexible P.C. Board, Switch
EP04	22199019	Flexible P.C. Board, Tuning
EP05	22199154	Main P.C. Board Ass'y, (Others)
EP05	22199155	Main P.C. Board Ass'y, (U.S.A., Europe and Australia)

Location No.	Part No.	Description
CAPACITORS		
C = $\pm 0.25\mu\text{F}$, D = $\pm 0.5\mu\text{F}$, J = $\pm 5\%$, K = $\pm 10\%$, M = $\pm 20\%$, Z = $-20+80\%$		
ABBREVIATIONS: EL = Electrolytic, TT = Tantalum		
C008, 009	20361103	Chip, 0.01mfd, 50V, Z
C010, 011	20361103	Chip, 0.01mfd, 50V, Z
C012	20363472	Chip, 4700pF, 50V, K
C071	20331101	Chip, 100pF, 50V, J
C072	20363102	Chip, 1000pF, 50V, K
C073	20331409	Chip, 4pF, 50V, C
C074	20332680	Chip, 68pF, 50V, J, CH
C076	20332680	Chip, 68pF, 50V, J, CH
C077	20332150	Chip, 15pF, 50V, J, CH
C079	20361223	Chip, 0.022mfd, 50V, Z
C080	20361103	Chip, 0.01mfd, 50V, Z
C081	20332100	Chip, 10pF, 50V, D, CH
C082	20333150	Chip, 15pF, 50V, J, PH
C101	20331270	Chip, 27pF, 50V, J
C102	20331560	Chip, 56pF, 50V, J
C103	20363472	Chip, 4700pF, 50V, K
C104	20361223	Chip, 0.022mfd, 50V, Z
C105	20363102	Chip, 1000pF, 50V, K
C106	20332271	Chip, 270pF, 50V, J, CH
C107	20363222	Chip, 2200pF, 50V, K
C108	20332820	Chip, 82pF, 50V, J, CH
C109	20332271	Chip, 270pF, 50V, J, CH
C110	20331431	Chip, 430pF, 50V, J
C111	20332180	Chip, 18pF, 50V, J, CH
C112	20364104	Chip, 0.1mfd, 16V, Z
C113	20432220	EL, 22mfd, 4V
C114	20477228	TT, 0.22mfd, 35V
C115	22313683	Chip, 0.068mfd, 25V, Z
C116	20363222	Chip, 2200pF, 50V, K
C117	20364473	Chip, 0.047mfd, 25V, Z
C118	22313683	Chip, 0.068mfd, 25V, Z
C119	20332409	Chip, 4pF, 50V, C, CH
C120, 121, 122, 123	20361223	Chip, 0.022mfd, 50V, Z
C191	22309255	Trimmer, 6pF
C192	22309260	Trimmer, 10pF
C201	20475478	TT, 0.47mfd, 16V
C202	22313683	Chip, 0.068mfd, 25V, Z
C203	20364473	Chip, 0.047mfd, 25V, Z
C204	22356391	Chip, 390pF, 50V, J, TH
C205	20364473	Chip, 0.047mfd, 25V, Z
C206, 207, 208, 209	20366103	Chip, 0.01mfd, 25V, K
C210	20431221	EL, 220mfd, 2V
C301, 302	20363332	Chip, 3300pF, 50V, K
C303, 304	22490181	TT, 1mfd, 25V

Location No.	Part No.	Description
C305, 306 307	20431221	EL, 220mfd, 2V
C308	20472220	TT, 22mfd, 4V
C309	22490084	TT, 15mfd, 6.3V
C310	20472220	TT, 22mfd, 4V
C311	20432221	EL, 220mfd, 4V
C312, 313	20363102	Chip, 1000pF, 50V, K
C314	20364473	Chip, 0.047mfd, 25V, Z
C315	20361223	Chip, 0.022mfd, 50V, Z
C401, 402, 403, 404	20363471	Chip, 470pF, 50V, K
C405, 406	20472229	TT, 2.2mfd, 4V
C407, 408	20366103	Chip, 0.01mfd, 25V, K
C409, 410	20486478	EL, 0.47mfd, 20V
C411, 412	20360006	Chip, 1mfd, 16V
C413, 414	20331151	Chip, 150pF, 50V, J
C415, 416	20363222	Chip, 2200pF, 50V, K
C417, 418	20363472	Chip, 4700pF, 50V, K
C419, 420	20475478	EL, 0.47mfd, 16V
C421, 422	20363681	Chip, 680pF, 50V, K
C423	20482479	TT, 4.7mfd, 4V
C424	20482229	TT, 2.2mfd, 4V
C426, 427	20472100	TT, 10mfd, 4V
C429	20432220	EL, 22mfd, 4V
C431, 432	20366103	Chip, 0.01mfd, 25V, K
C433	20365153	Chip, 0.015mfd, 25V, M
C434	20363102	Chip, 1000pF, 50V, K
C435	20363152	Chip, 1500pF, 50V, K
C436	20431101	EL, 100mfd, 2V
C437	20431470	EL, 47mfd, 2V
C438	22472220	TT, 22mfd, 4V
C439	20363472	Chip, 4700pF, 50V, K
C441, 442 443, 444	20331470	Chip, 47pF, 50V, J
C445, 446	20365153	Chip, 0.015mfd, 25V, M
C447	20331101	Chip, 100pF, 50V, J
C448	20361223	Chip, 0.022mfd, 50V, Z
C449	20360006	Chip, 1mfd, 16V, Z
C453	20431221	EL, 220mfd, 2V
C501, 502	20363682	Chip, 6800pF, 50V, K
C503, 504	22354473	Chip, 0.047mfd, 25V, M
C505, 506	20485688	TT, 0.68mfd, 16V
C507, 508	20363472	Chip, 4700pF, 50V, K
C509, 510	22353333	Chip, 0.033mfd, 25V, M
C511, 512, 513	20360006	Chip, 1mfd, 16V, Z
C514	20431101	EL, 100mfd, 2V
C611, 612	20360006	Chip, 1mfd, 16V, Z

Location No.	Part No.	Description
C902	22352104	Chip, 0.1mfd, 25V, Z
C903	20472220	TT, 22mfd, 4V
C905	22352104	Chip, 0.1mfd, 25V, Z
C906	20472220	Chip, 22mfd, 4V
C907	20360006	Chip, 0.1mfd, 16V, Z
C909	20477228	TT, 0.22mfd, 35V
C910	20364473	Chip, 0.047mfd, 25V, Z
C911	20331180	Chip, 18pF, 50V, J
C912	20363102	Chip, 1000pF, 50V, K
C913, 914	20363102	Chip, 1000pF, 50V, K
C916	20364473	Chip, 0.047mfd, 25V, Z
C917	22364153	Chip, 0.015mfd, 25V, Z
C918	20363102	Chip, 1000pF, 50V, K
C919	22490084	TT, 15mfd, 6.3V
C920	20364473	Chip, 0.047mfd, 25V, Z

RESISTORS

Resistors are Chip Film 1/10W, $\pm 5\%$, unless otherwise noted. K = 1000, M = 1000000

R071, 072	20541104	100K ohm
R073	20541390	39 ohm
R101	20541562	5.6K ohm
R102, 103	20541471	470 ohm
R104	20541104	100K ohm
R105	20541152	1.5K ohm
R106	20541223	22K ohm
R107	20541683	68K ohm
R111	20541104	100K ohm
R112	20541102	1K ohm
R113	20541472	4.7K ohm
R114	20541104	100K ohm
R115	20541474	470K ohm
R116	20541473	47K ohm
R118	20541474	470K ohm
R119	20541124	120K ohm
R120	20541474	470K ohm
R191	22650472	250K ohm, B, Variable, Tuning
R192, 194	22658971	47K ohm, B, Semi-fixed Variable
R201	20541472	4.7K ohm
R202	20541123	12K ohm
R203	20541273	27K ohm
R205	20541332	3.3K ohm
R206, 207	20541184	180K ohm
R208	20541472	4.7K ohm
R209	20541332	3.3K ohm

Location No.	Part No.	Description
R210	20541222	2.2K ohm
R291	22658865	10K ohm, B, Semi-fixed Variable
R301, 302	20541229	2.2 ohm
R303	20541153	15K ohm For U.S.A. and Canada
R303	20541682	6.8K ohm For Europe, Australia and Others
R309	20541470	47 ohm
R311, 312	20541103	10K ohm For U.S.A. and Canada
R311, 312	20541183	18K ohm For Europe, Australia and Others
R313	20541124	120K ohm
R392	22650471	10K ohm, A, Variable, Volume
R401, 402	20541334	330K ohm
R403, 404	20541133	13K ohm
R405, 406	20541822	8.2K ohm
R407, 408	20541752	7.5K ohm
R409, 410	20541222	2.2K ohm
R411, 412	20541822	8.2K ohm
R413, 414	20541103	10K ohm
R415, 416	20541332	3.3K ohm
R417, 418	20541222	2.2K ohm
R421	20541223	22K ohm
R422	20541479	4.7 ohm
R423	20541339	3.3 ohm
R426	20541472	4.7K ohm
R427	20541103	10K ohm
R428	20541474	470K ohm
R429, 430, 431, 432	20541106	10M ohm
R433, 434	20541105	1M ohm
R445, 446, 447, 448	20541106	10M ohm
R449, 450, 451, 452	20541105	1M ohm
R453	20541104	100K ohm
R454	20541102	1K ohm
R455	20541472	4.7K ohm
R458, 459	20541472	4.7K ohm
R460	20541153	15K ohm
R461	20541223	22K ohm
R462	20541153	15K ohm
R465	20541472	4.7K ohm
R491, 492	22658985	2.2K ohm, Semi-fixed Variable
R501, 502	20541434	430K ohm
R503, 504	20541473	47K ohm
R505, 506	20541332	3.3K ohm

Location No.	Part No.	Description

AC01	22908397	Owner's Manual (U.S.A.)
AC01	22908398	Owner's Manual (Europe)
AC01	22908399	Owner's Manual (Australia)
AC01	22908400	Owner's Manual (Others)
AC01	22908471	Owner's Manual (Canada)
AC02	22991182	Carrying Case
AC03	22152708	Headphone, HR-MV5 (U.S.A., Canada)
AC03	22152731	Headphone, HR-P2-BK (Europe/Australia/Others)
AC04	22154272	Stereo Wired Microphone
AC05	22810161	Ear Pad Set (Europe/Australia/Others)

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